

Appl. No.: 10/572,764
Amdt. dated January 12, 2012
Reply to Office Action of December 13, 2011,

Amendments to the Specification:

Please replace the “Abstract” paragraph with the following:

Abstract

A functionalized photocurable perfluoropolyether is used as a material for fabricating a solvent-resistant microfluidic device. Such solvent resistant microfluidic devices can be used to control the flow of small amounts of a fluid, such as an organic solvent, and to perform microscale chemical reactions that are not amenable to other polymer based microfluidic devices. The use of a photocurable perfluoropolyether (PFPE) material for fabricating a solvent-resistant PFPE-based microfluidic device, methods of flowing a material and performing a chemical reaction in a solvent-resistant PFPE-based microfluidic device, and the solvent-resistant PFPE-based microfluidic devices themselves are described. In an embodiment, a method is described for preparing a patterned layer of a photocured perfluoropolyether, the method comprising: (a) providing a substrate, wherein the substrate comprises a patterned surface; (b) contacting a perfluoropolyether precursor with the patterned surface of the substrate; and (c) photocuring the perfluoropolyether precursor to form a patterned layer of a photocured perfluoropolyether.